

U.S. Patent Application Serial No. **10/594,546**
Amendment filed September 8, 2008
Reply to OA dated June 6, 2008

REMARKS

Claims 1-16 are currently being examined in this application, and stand rejected. Claim 1 is an independent claim in this pending application, with claims 2-16 depending directly or indirectly from claim 1. Claims 1 and 4 have been amended to more distinctly claim and point out that which the applicants regard as their invention. Claims 3 and 11 are canceled by this response. The applicants respectfully submit that no new matter has been added, and it is believed that these amendments are fully responsive to the Office Action dated **June 6, 2008**.

Amended claim 1 hereby incorporates the abutting part as previously found within claim 3. Particularly, amended claim 1 now recites that the stationary phase cartridge has an abutting step part formed on the inner surface of the cartridge body. The abutting step part is abutted to a lower end of an inserted cartridge body when inserting the other cartridge body from an upper end opening of the cartridge body.

Because, claim 3 would be redundant in light of the present amendment to claim 1, claim 3 is canceled by this response. Further due to its dependence on claim 3, claim 11 would be similarly redundant in light of the cancellation of claim 3. As such, claim 11 is also canceled by this response. Claim 4 has been amended to depend from claim 1 instead of claim 3.

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The office action rejects claims 1-16 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Price (U.S. Patent No. 5,439,593). Because claims 3 and 11 have been canceled by this response, the rejection under Price of claims 3 and 11 have been rendered moot.

Price discloses a hollowing stationary phase extraction cartridge, which can be easily and securely applied for automatic system, semi-automatic system, and manual system. The office action takes the position that Price discloses each and every element of claims 1-16. Additionally, the office action takes the backup position that, if Price does not disclose each and every element of these claims, the present invention only optimizes the Price disclosure in a manner being obvious to a person having ordinary skill in the art. However, the disclosure of Price and the present invention differ in a number of ways.

First, the horizontal wall of Price, corresponding to the stopper part 1f of the present invention, does not support the outer peripheral edge of the outflow frit (the lower frit 22). As a result, the invention of Price does not realize the advantage of decreasing the dead space, as discussed above.

Conversely, claim 1 claims, and finds support in Figures 1 and 4, the stopper part 1f being formed on the inner surface of the lower side of the cartridge body 1A and being projected inward.

The stopper part 1f supports only the outer peripheral edge of the outflow side frit 5. This is a main feature of the present invention. As a result, the stopper part 1f does not form a large dead space. Because the accumulation of the specimen and solution in the stopper art 1f can be minimized by the present invention, the present invention allows the target component to be extracted as planned.

Second, Price does not disclose an abutting step part as now recited in amended claim 1. Particularly, Price does not disclose the abutting step being formed on the inner surface of the cartridge body, and said abutting step part being abutted to a lower end of an inserted cartridge body when inserting the other cartridge body from an upper end opening of the cartridge body. Because Price does not disclose the abutting step part as disclosed in amended claim 1, the specimen and solution do not flow as efficiently through the invention of Price as they would through the present invention.

As shown in Figure 4, when the invention described claim 1 is in the fitted state, the lower end of the cartridge body 1A is located above and is abutting the abutting step part 1e formed on the inner surface of the cartridge body 1A located below. Herein, the stepper part 1f supports only the outer peripheral edge of the outflow side frit 5. The inner surface of the cartridge body located below continues to the inner surface of the cartridge body located below, and continues to the inner surface of the cartridge body located above. The inner surface located below is formed so as to be

substantially flush with the inner surface located above so as to sandwich the stopper part 1f projecting inward a little. Accordingly, the specimen and solution flow straightly and smoothly.

Third, even if Price discloses cartridges (32, 32) of Fig. 5 being connected in a vertical direction, the inner surfaces of the bodies (2, 2) are not continued so as to be substantially flush therewith. Again, because Price lacks this feature, the specimen and solution would not flow as efficiently.

Conventional problems with the prior art include when a specimen and solution are accumulated in the dead space, the concentration of the target component is disadvantageously reduced. Another conventional problem occurs at the time of extraction of the next target component due to the accumulation of specimen and solution. The invention of Price, as well as the Cook reference below, does not solve these issues. The present invention resolves these problems.

An additional advantage of the present invention is that in a pre-treatment step of analysis of a water environment, absorbing and drying are performed in order to remove water from a stationary phase extraction cartridge. Because the internal structure of the stationary phase extraction cartridge of the present invention is more hydrodynamically sound than the prior art, water can be removed easily and absorbing/drying can be performed quickly.

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These three differences between Price and the present invention are substantial. The cartridge of Price is an injector-type cartridge containing some problems to be solved by the present invention. Accordingly, Price does not disclose, or even suggest, the above-mentioned advantages.

As such, Price does not disclose each and every element of claim 1, nor does it render claim 1 obvious. As such, claim 1 is believed to be patentable, and in condition for allowance. Further due to their ultimate dependence on claim 1, claims 2, 4-10, and 12-16 are believed to be patentable and in condition for allowance. Withdrawal of the outstanding rejection under Price is now in order and respectfully solicited.

The office action also rejects claims 1-16 under 35 U.S.C. §§ 102(a) or (e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over Cook (U.S. Patent No. 6,761,855). Additionally, the office action takes the backup position that, if Cook does not disclose each and every element of these claims, the present invention only optimizes the Cook disclosure in a manner being obvious to a person having ordinary skill in the art. Because claims 3 and 11 have been canceled by this response, the rejection under Cook of claims 3 and 11 have been rendered moot.

Cook, similarly to Price, does not disclose the three main points listed above. As such, Cook does not disclose each and every element of claim 1, nor does it render claim 1 obvious. As such,

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claim 1 is believed to be patentable, and in condition for allowance. Further due to their ultimate dependence on claim 1, claims 2, 4-10, and 12-16 are believed to be patentable and in condition for allowance. Withdrawal of the outstanding rejection under Cook is now in order and respectfully solicited.

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either Price or Cook in view of either August (U.S. Patent No. 6,530,288) or Serenko (U.S. Patent No. 5,989,424). Because neither Price nor Cook discloses the elements of claim 1, as discussed above, the cited combination of references does not render claims 5 and 6 obvious. As such, withdrawal of the § 103(a) rejection citing Price or Cook, in view of either August or Serenko, is now in order and respectfully solicited.

Claim 6 also stands rejected under 35 U.S.C. § 103(a) as being unpatentable over either Price or Cook in view of either August et al. or Serenko et al. in further view of Muller et al. (U.S. Patent No. 4,732,687) and Radnoti (U.S. Patent No. 4,055,498). Because neither Price nor Cook discloses the elements of claim 1, as discussed above, the cited combination of references does not render claim 6 obvious. As such, withdrawal of the § 103(a) rejection citing Price or Cook, in view of either August or Serenko, and in further view of either Muller et al. or Radnoti, is now in order and respectfully solicited.

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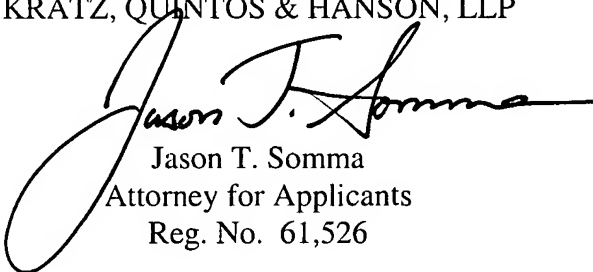
In view of the aforementioned amendments and accompanying remarks, claims 1, 2, 4-10, and 12-16 are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees that may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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